



# APPLICATION SPECIFICATION

## TITLE

### **MOLEX GNSS ANTENNA-MAGNETIC MOUNT**

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REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
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DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
<b>AS-2134993000</b>	Liu Hai 2019/11/22	Cooper Zhou 2019/11/22	Andy Zhang 2019/11/22



# APPLICATION SPECIFICATION

## MOLEX GNSS ANTENNA-MAGNETIC MOUNT

### 1.0 SCOPE

This specification describes the antenna application and surrounding. The information in this document is for reference and benchmark purposes only. The user is responsible for validating antenna RF performance based on the user's actual implementation.

Antenna illustrations in this document are generic representations. They are not intended to be an image of any antenna listed in the scope.

### 2.0 PRODUCT DESCRIPTION

#### 2.1 PRODUCT NAME AND SERIES NUMBER (S)

Product name: Molex GNSS Antenna-Magnetic Mount

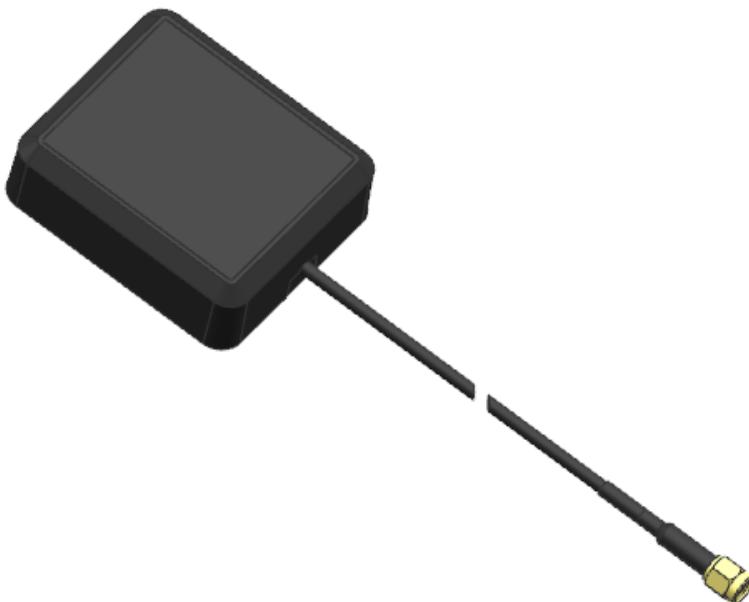
Series Number: 2134993000

#### 2.2 DESCRIPTION

2134993000 is external antenna being designed for GNSS (BeiDou, GPS and Glonass). It has plastic housing with Magnetic mounted on a metal surface.

#### 2.3 PRODUCT STRUCTURE INFORMATION

Please refer to PS-2134993000 for full information.



2134993000 MOLEX GNSS ANTENNAf 3D VIEW

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## 3.0 APPLICABLE DOCUMENTS

DOCUMENT	NUMBER	DESCRIPTION
Sale Drawing (SD)	SD-2134993000	Mechanical Dimension of the product
Product Specification (PS)	PS-2134993000	Product Specification
Packing Drawing (PK)	PK-2134993000	Product packaging specifications

## 4.0 ANTENNA PERFORMANCE

### 4.1 RF TEST CONDITIONS

All measurements are done for antenna with VNA Agilent 5071C and Over-The-Air (OTA) chamber.

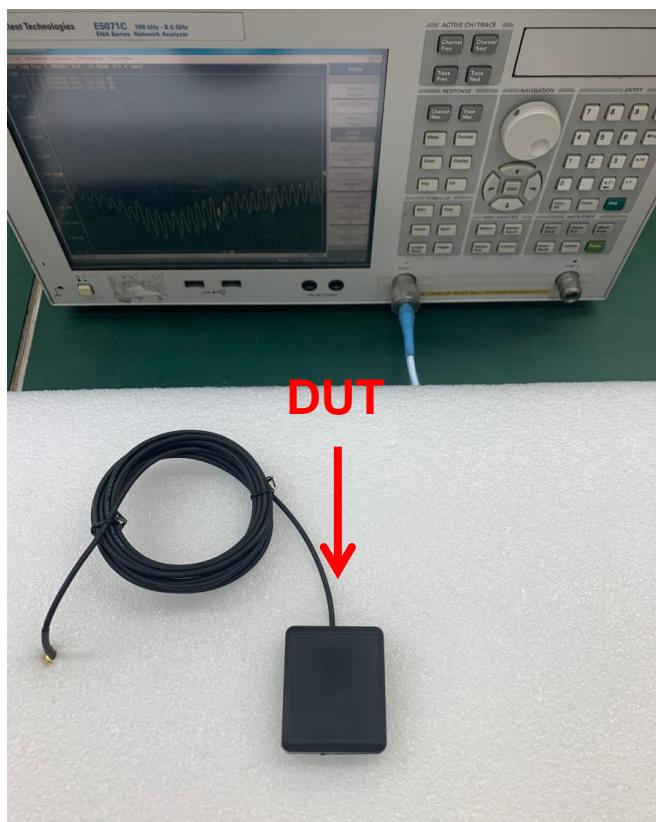


FIGURE 4.1.1 ANTENNA TESTED WITH VNA E5071C IN FREE SPACE

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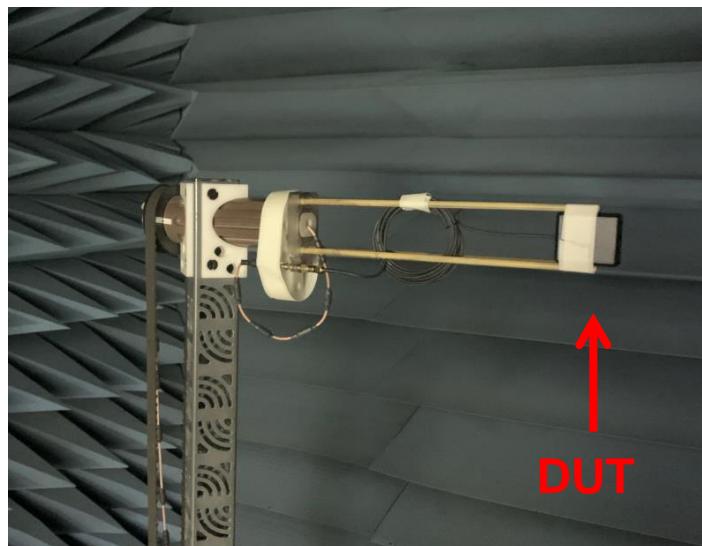


FIGURE 4.1.2 ANTENNA TESTED IN OTA CHAMBER IN FREE SPACE

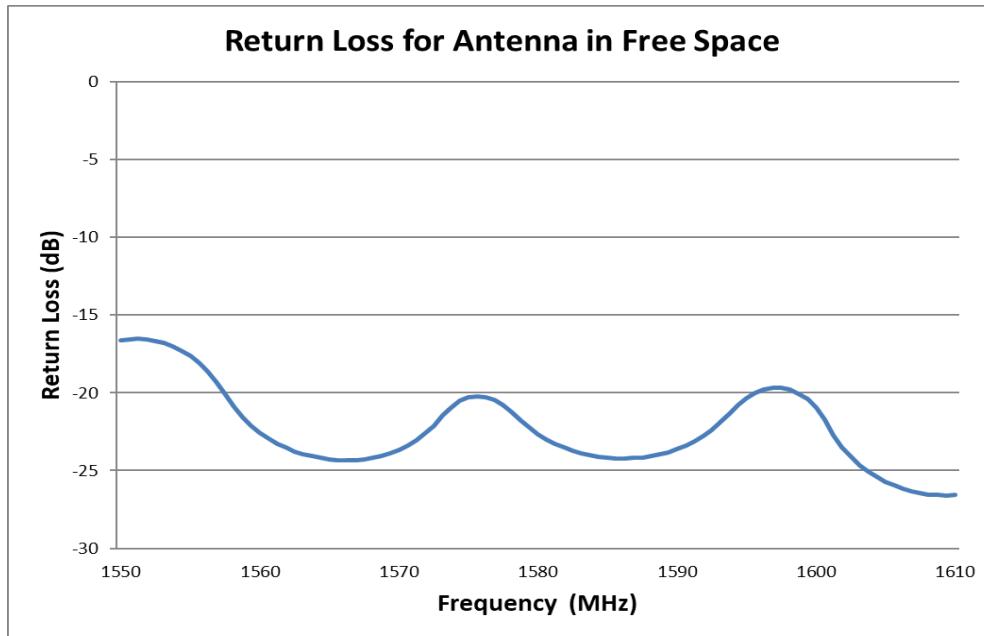
## 4.2 ANTENNA PERFORMANCE

GNSS ANTENNA				
DESCRIPTION	EQUIPMENT	REQUIREMENT		
Frequency Range	VNA E5071C	1561.098±2.046 MHz	1575.42±1.023 MHz	1602+/-4MHz
VSWR	VNA E5071C	$\leq 2$		
Average Total Efficiency	OTA Chamber	>20%	>30%	>25%
Peak Gain (Max)	OTA Chamber	-1.7dBi	-0.4dBi	-1.4dBi
Polarization	OTA Chamber	RHCP		
Input Impedance	VNA E5071C	50 ohms		
GNSS LNA				
DESCRIPTION	EQUIPMENT	REQUIREMENT		
Frequency Range	VNA E5071C	1561.098±2.046 MHz	1575.42±1.023 MHz	1602+/-4MHz
DC Voltage	DC Supplier	3V		
Gain	VNA E5071C	28±3dB		
VSWR	VNA E5071C	$\leq 2$		
Noise Figure	VNA E5071C	$\leq 1.5$ dB		
DC Current	DC Supplier	11±3mA (at 3.3V)		

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## 4.3 RETURN LOSS PLOT

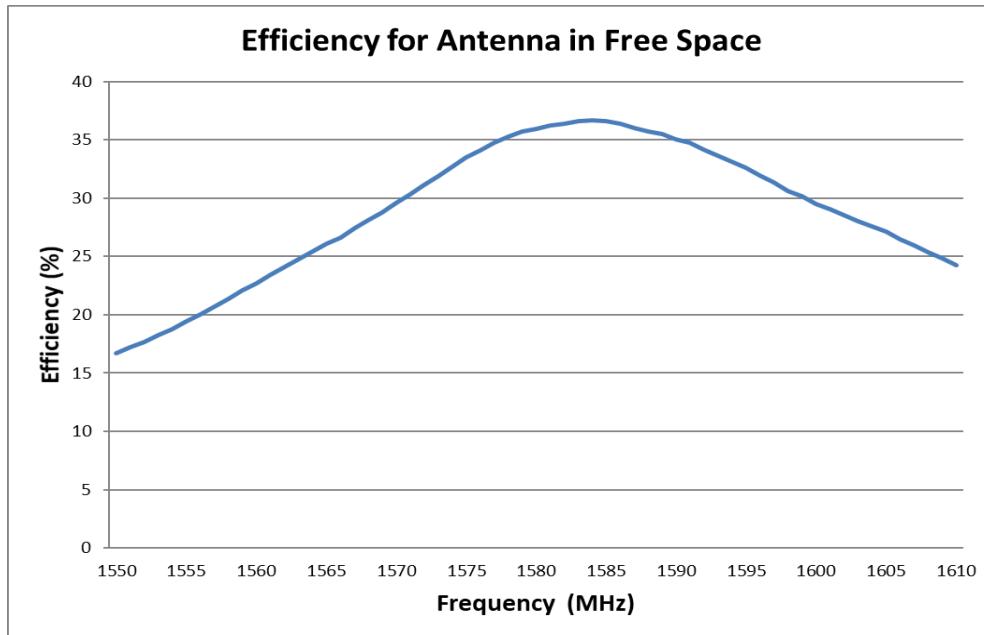
All measurements in this document are done in free space.



**FIGURE 4.3 RETURN LOSS OF ANTENNA IN FREE SPACE**

## 4.4 EFFICIENCY PLOT

All measurements in this document are done in free space.



**FIGURE 4.4 EFFICIENCY OF ANTENNA IN FREE SPACE**

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## 4.5 PEAK GAIN PLOT

All measurements in this document are done in free space.

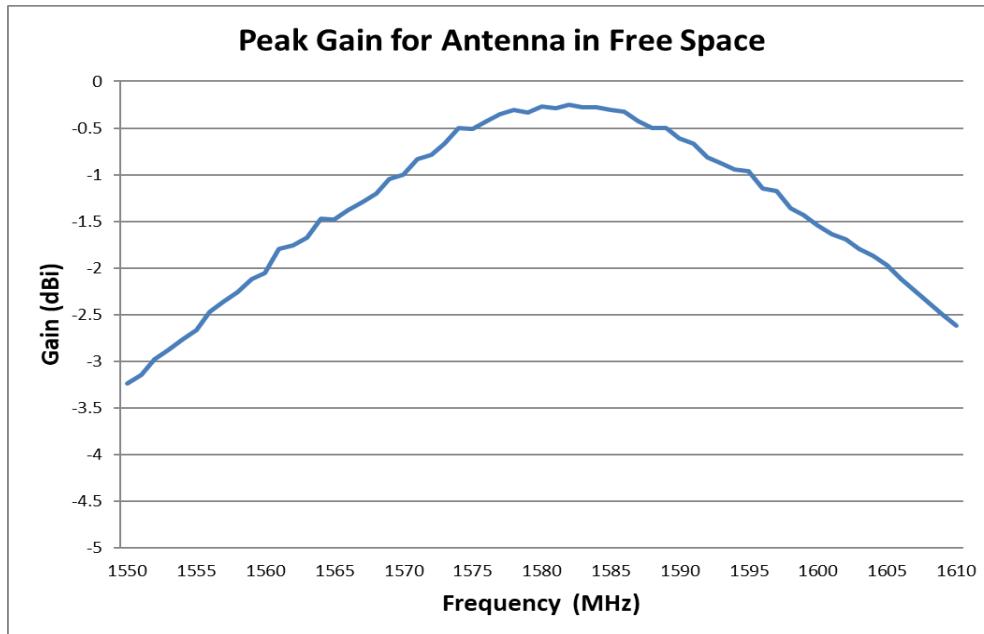


FIGURE 4.5 PEAK GAIN OF ANTENNA IN FREE SPACE

## 4.6 AXIAL RATIO PLOT

All measurements in this document are done in free space.

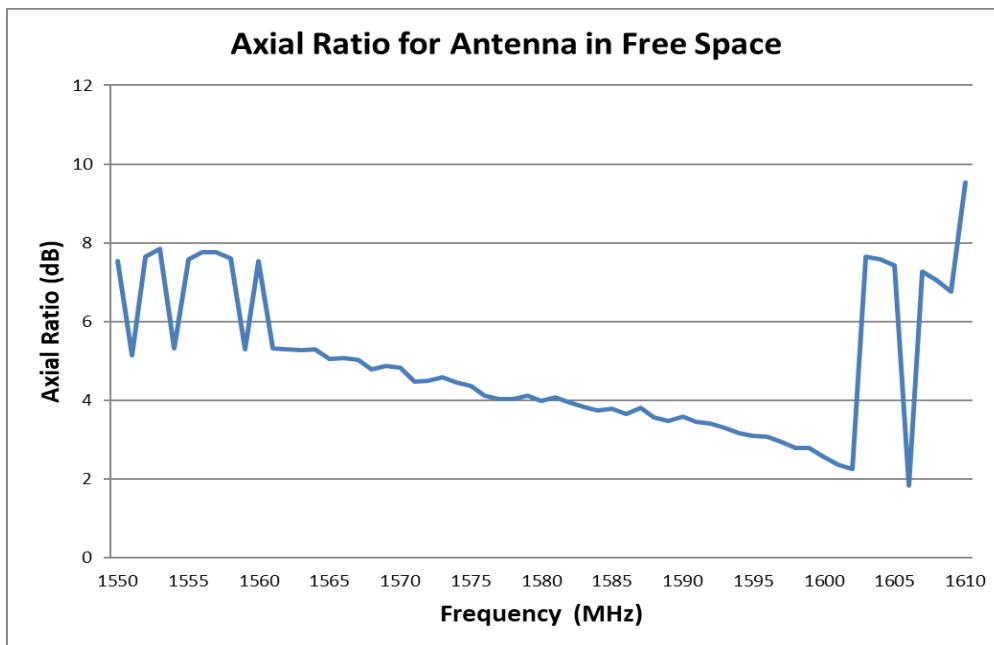


FIGURE 4.6 AXIAL RATIO OF ANTENNA IN FREE SPACE

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## 4.7 RADIATION PATTERN

All measurements in this document are done in free space.

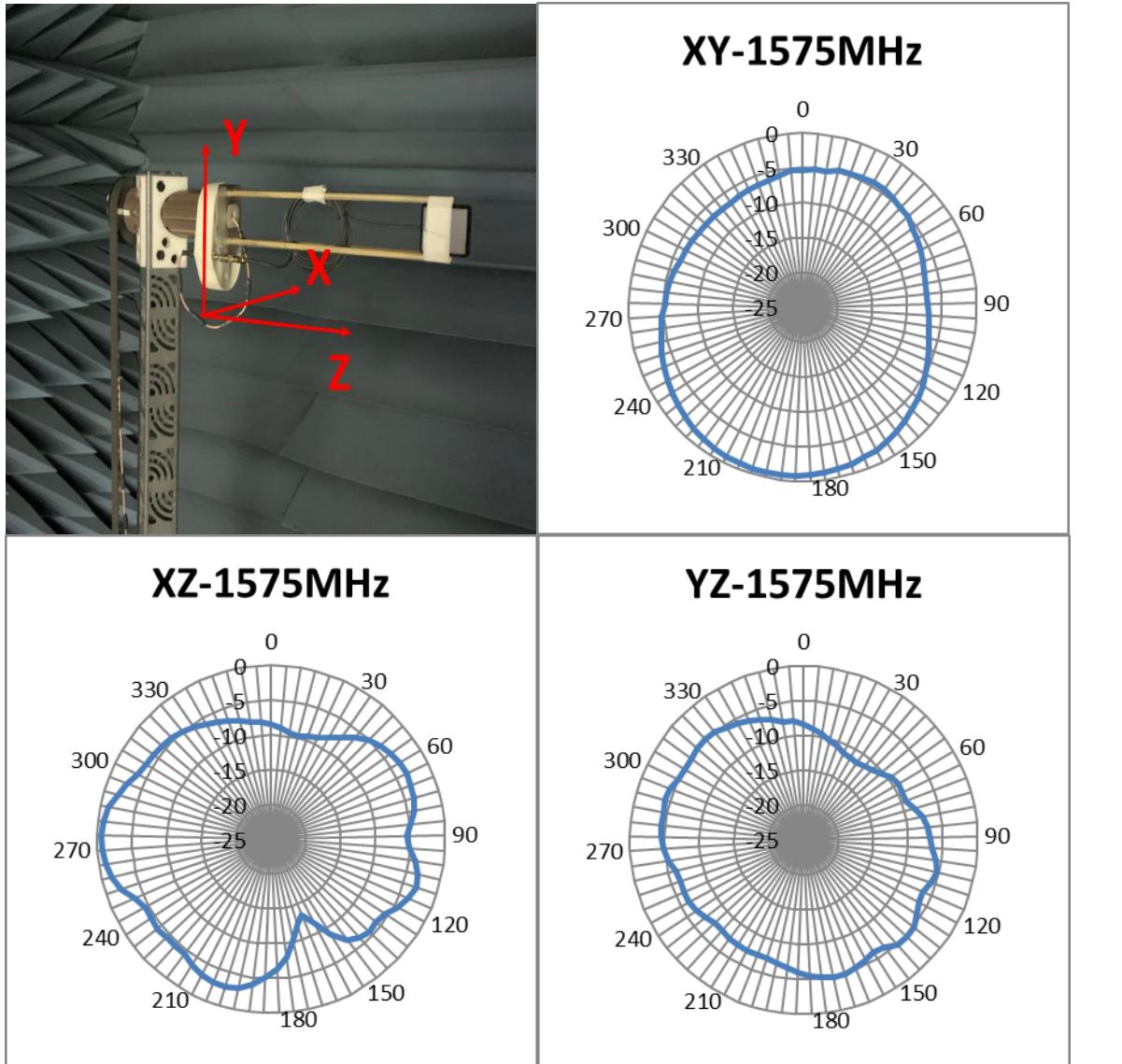


FIGURE 4.7.1 2D RADIATION PATTERN OF ANTENNA AT 1575MHz IN FREE SPACE

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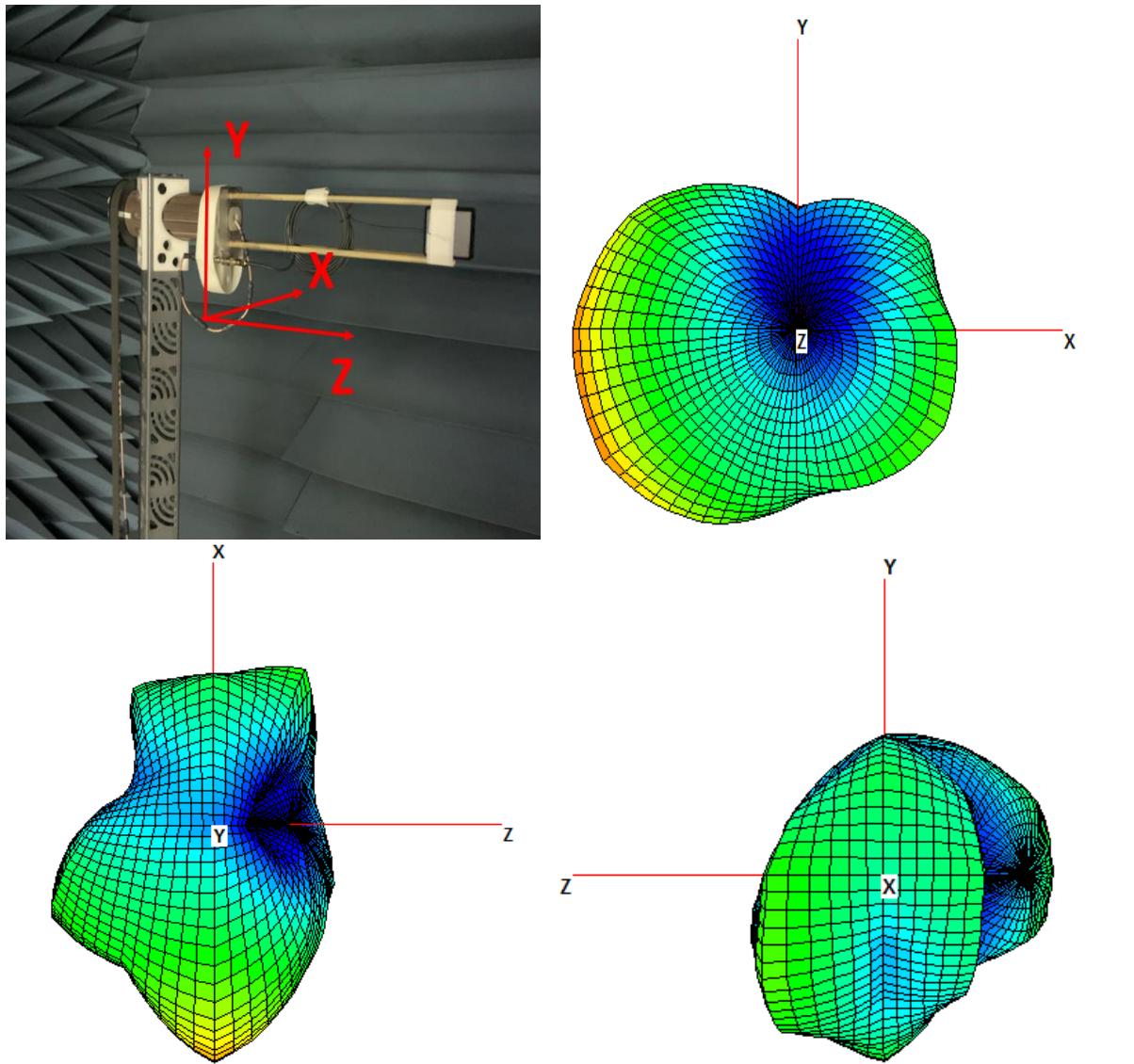


FIGURE 4.7.2 3D RADIATION PATTERN OF ANTENNA AT 1575MHZ IN FREE SPACE

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## 4.8 LNA GAIN

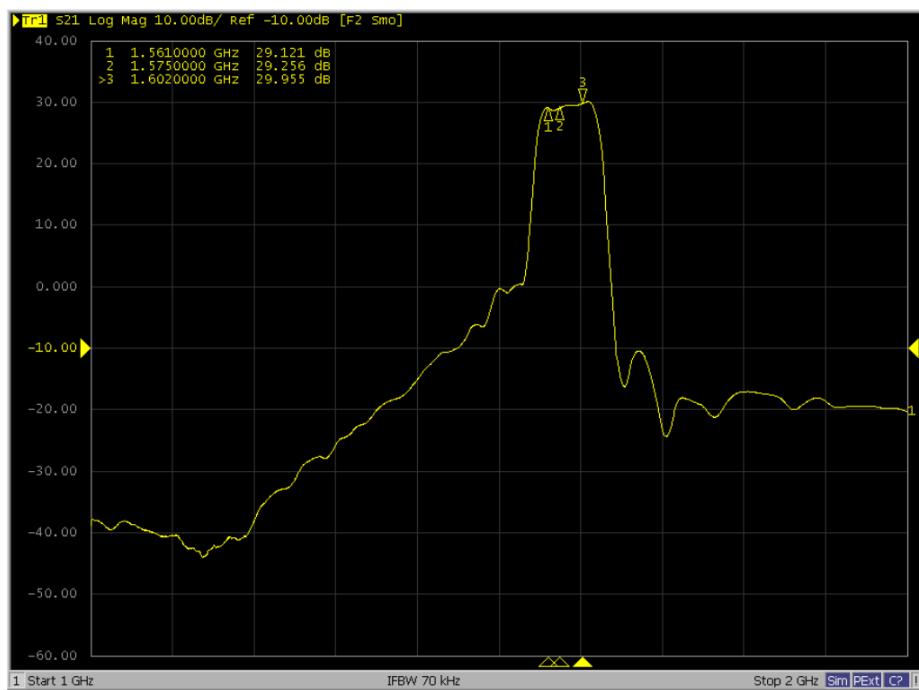


FIGURE 4.8.1 LNA GAIN OF ANTENNA

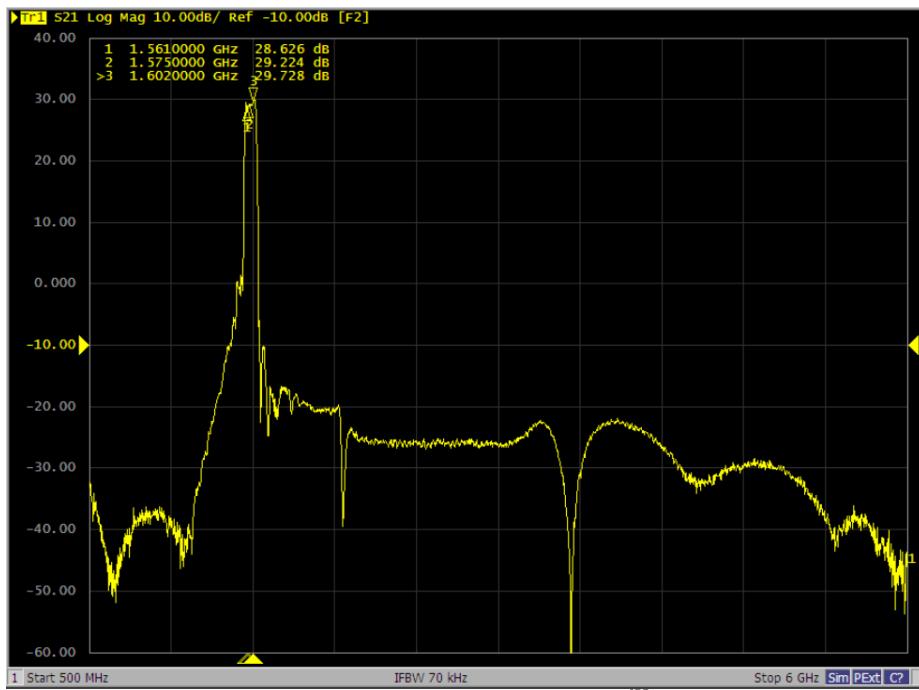


FIGURE 4.8.2 OUT-BAND REJECTION IN FREE SPACE

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## Change History

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A	2019/11/22	First Release	NA

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